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TM-(L)-734/011/00

TECHNICAL MEMORANDUM

(TM Series)

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1604-PICE Simulation Probram Operating Instructions (Milestone VII)

Data Reduction and Output Processing System

by

P. T. Kastama
Simulation Section

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SYSTEM DEVELOPMENT CORPORATION
2500 COLORADO AVE.
SANTA MONICA
CALIFORNIA

1.0 SUBSYSTEM IDENTIFICATION

1.1 Title

Data Reduction and Output Processing System.

1.2 Programmed

15 October 1962, J. D. Solomon, P. T. Kastama, SDC.

1.3 Documented

31 October 1962, P. T. Kastama, SDC.

2.0 PURPOSE

The Data Reduction and Output Processing System is used to process the input/output tapes written by SIPS and IOSIM in the 1604-PICE simulation system and list them in a readable and meaningful format with added identifying information.

3.0 COMPONENTS

3.1 DROPS

Ident H54, Mod 00.

3.2 DUZ

Ident H55, Mod 00.

4.0 USAGE

4.1 Calling Sequence

4.1.1 DROPS

```
   L        NOP     M
            RTJ     DROPS
  L + 1     SLJ     ALPHA
            ZRO     P
  L + 2             XX
  L + 3             YY
  L + 4             ZZ
  L + 5             T
```

Where:

M	=	Number of modifications
ALPHA	=	Return address when DROPS is complete
P	=	Number of parameters
XX	=	Tape number if input by tape (card deck prestored)
	=	OO if input by cards
YY	=	Tape number of tape to be processed
ZZ	=	Tape number of listable output tape
T	=	0 or blank if computer-PICE recording tape
	=	1 if PICE-computer input tape

4.1.2 DUZ

```
   L        RTJ     DUZ
             A   B   C
  L + 1     Normal Return
```

Where:

A = Radix

B = 1 = Print on-line

= 0 = No print

C = Output tape number (2-12)

4.2 Method

The system is brought into the computer from the master tape by the Utility Control Program. First an initialization is performed and all the tables, registers and indices are cleared. Then the card reader is activated to accept control cards. These card images are consecutively stored in a Function Table (10 words per card and 30 cards in a series). These control cards specify which records are to be processed and the manner in which the data are to be processed. Card reading terminates when an "ENDPRC" card is found or when 30 cards have been read.

Data records are read off the tape one record at a time for processing. Special function-oriented subroutines are referenced to process one or several records of data. The reduced data is then written on a listable magnetic tape. An on-line print option allows the processing of a small amount of data to go directly from computer to printer for an initial analysis of data.

4.3 On-Line Error Printouts

4.3.1 SELECT ERROR

Illegal input source specified for control deck. Reload control deck and hit start to continue.

4.3.2 PARITY OR BUFFER LENGTH ERROR

Rewind prestored tape, reload control cards and hit start to continue.

4.3.3 ILLEGAL CHARACTER

Illegal character punched in card, correct card, reload control deck and hit start to continue.

4.3.4 CARD READER NOT READY

Make card reader ready, reload control deck and hit start to continue.

4.3.5 LIST TAPE PARAMETER ZZ ON DROPS CARD IS INCORRECT. LOAD CORRECT CARD IN READER AND HIT START....

Tape number of listable output tape is incorrect. Load correct card in reader and hit start to continue.

4.3.6 USE A $BEGPRC CARD IMMEDIATELY AFTER THE *DROPS CARD AND PRESS START TO CONTINUE.

Insert a correct $BEGPRC card in proper place and hit start to continue.

4.3.7 USE A CORRECT $PROCESS CARD AND TRY AGAIN.

Use a correct $PROCESS card and hit start to continue.

4.3.8 READ PAGE 57 of TM-734/001/00 FOR CORRECT P3 CODE. LOAD CORRECT CARD AND PRESS START.

The code designating which kind of data is to be reduced is incorrect. Correct the card and hit start to continue.

4.3.9 THE INPUT TAPE FORMAT APPEARS TO BE INCORRECT BUT YOU MAY PRESS START TO TRY AGAIN. GIVE IT UP AFTER 3 TRIES.

Incorrect input format, hit start and DROPS will try to read next record. If error occurs three times, input tape is probably bad.

4.3.10 DROPS HAS COMPLETED THE REQUESTED TAPE PROCESSING. SET UP NEW TAPES, LOAD NEW CONTROL DECK IN READER AND JUMP TO LOCATION ____ TO CONTINUE. IF YOU DO NOT DESIRE TO CONTINUE, NUDGE START GENTLY TO RETURN TO COP.

End of job, hit start to return to COP or set up new tapes and load new control deck and jump to specified location to process a new job.

4.3.11 NEXT TIME USE AN $ENDPRC CARD IN THE PROPER SEQUENCE.

The $ENDPRC card is out of sequence or incorrect but DROPS will continue if you hit start.

4.3.12 READ-LENGTH OR BUFFER-LENGTH ERROR ENCOUNTERED WHILE ATTEMPTING TO READ THE PROCESS TAPE. PRESS START TO TRY AGAIN.

Tape error encountered. DROPS will backspace and try to read again. If this error occurs three times in succession, change tape units, reload control deck and hit start to begin again.

4.3.13 ERROR ENCOUNTERED IN TRYING TO BACKSPACE PROCESS TAPE. MAKE TAPE READY, RELOAD CONTROL DECK AND PRESS START TO TRY AGAIN.

Make process tape unit ready, reload control deck in reader, mount input tape on a different tape unit and hit start to try again.

5.0 OPERATIONAL PROCEDURE

The operation of the DROPS subsystem requires a simulation master tape mounted on Tape Unit 1, an input tape containing data to be reduced and an output tape. The master tape must contain the DROPS subsystem. A card deck as shown in Figure 1 is read into the 1604 via the 533 reader to operate the DROPS subsystem.

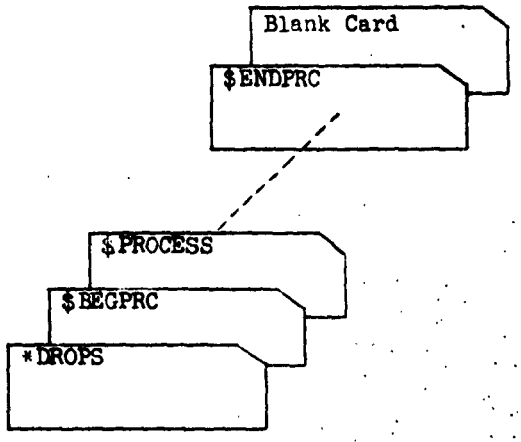
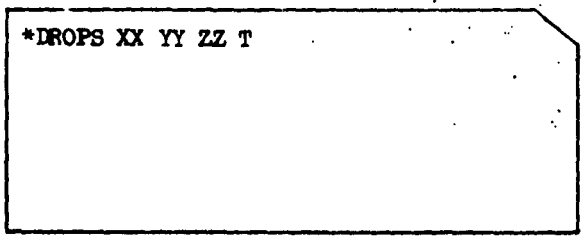


Figure 1

5.1 System Calling Card

This card should precede all other cards when operating with the DROPS system. When the Master Utility Program is operated, this card will be recognized and the DROPS system will be brought in and executed.



Where:

XX = Input tape unit number (00 would indicate input from card reader)

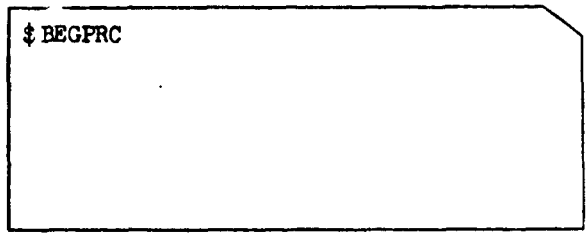
YY = Unit number of tape being processed

ZZ = Unit number of listable output tape

T = Input or output tape:
0 or Blank = Output tape (computer to PICE)
1 = Input tape (PICE to computer)

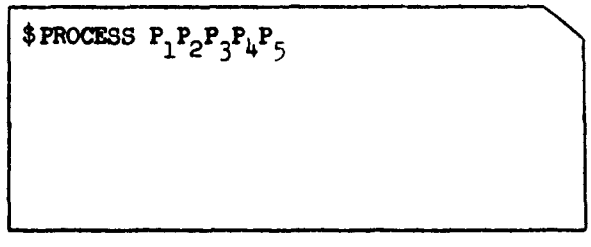
5.2 Begin Process Card

This card signals the DROPS control program to start the initialization process for all subroutines:



5.3 Function Card

The function card is used to designate which record or records of the data tape are to be processed and in what format. Thirty function cards are permitted.



Where:

P_1 = Columns (10-14) = PICE start address for identification
P_2 = Columns (17-21) = Block length of records on tape
P_3 = Columns (22-23) = For type of output format of data (see table below)

*P_4 = Columns (25-26) = Radix point specifying number of bits from the right

P_5 = Column (28) = 1 if on-line printout is desired (data will also be stored on tape)
= 0 or blank, reduced data will be stored on a listable tape

P_3 = Codes
B = Convert BCD codes
Ø = Octal
T = Convert teletype codes
I = Convert to decimal (integer)
M = Convert to mixed decimal (P_4 will be examined for the radix point)
F = Convert as floating point

5.4 End Processing Card

When this card is read, card reading terminates. This card serves as a flag to the system that no more data is to be processed:

```
$ENDPRC
```

*Only applicable if P_3 contains an "M."

5.5 After the processing of all data on tape, the DROPS system output tape can be listed. The listing will contain the following information:

1) Tape identification (if input tape)
2) Record identification
3) Currency bits (if input tape)
4) PICF address for each data word
5) Data in specified format

6.0 RESTRICTIONS

A maximum of thirty (30) function cards is allowed.

7.0 ENVIRONMENT

The operation of the DROPS subsystem requires a simulation master tape, an input tape of data to be reduced and an output tape. Also required are an on-line printer and a card reader. No reference pool items are used.

8.0 TIMING

The time required to operate DROPS and DUZ is dependent upon the amount of data to be buffered between the 1604 and 1607 tape units.

9.0 STORAGE REQUIREMENTS

9.1 DROPS

460_{10} cells.

9.2 DUZ

804_{10} cells.

10.0 REFERENCES

10.1 TM-(L)-734/000/00, Performance Specifications for the Simulation of the STC Environment at the CPDC.

10.2 TM-(L)-734/001/00, Computer Program Design Specifications for the Simulation of the STC Environment at the CPDC.

10.3 TM-(L)-734/002/00, Input-Output Simulator for the Simulation of the 1604-PICE Interface (IOSIM).

10.4 TM-(L)-734/008/00, Operating Procedures for Simulated Input Preparation System (SIPS).

UNCLASSIFIED

System Development Corporation,
Santa Monica, California
1604-PICE SIMULATION PROGRAM OPERATING
INSTRUCTIONS (MILESTONE VII) DATA
REDUCTION AND OUTPUT PROCESSING SYSTEM.
Scientific rept., TM(L)-734/011/00,
by P. T. Kastama. 31 October 1962, 10p.,
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Unclassified report

DESCRIPTORS: Programming (Computers).
Satellite Networks. UNCLASSIFIED

Reports that the Data Reduction and Output Processing System is used to process the input/output tapes written by SIPS (Simulated Input Preparation System) and IOSIM in the 1604-PICE simulation system and lists them in a readable and meaningful format with identifying information. UNCLASSIFIED